

Remarks

In view of the above amendments and the following remarks, favorable reconsideration of the outstanding office action is respectfully requested.

Claims 1-24 and 32-36 remain in this application. Claims 25-31 have been withdrawn. Claims 1 and 32 have been amended. New Claims 37 and 38 have been added.

1. Restriction Requirement

The Patent Office issued a Restriction Requirement identifying the following groups of claims as being drawn to potentially distinct inventions:

Group I. Claims 1-24 and 32-36, drawn to an optical fiber, classified in class 385, subclass 123; and

Group II. Claims 25-31, drawn to a method of designing an optical fiber, classified in class 385, subclass 147.

The Patent Office asserted that these inventions may be regarded as independent and distinct from one another because Inventions II and I are related as process of making and product made, and that in the instant case the optical fiber as claimed in Group 1, claims 1-24 and 32-36 can be made by other methods of designing and the method of designing an optical fiber as claimed in Group II, claims 25-31 can be used to design different optical fibers.

In a telephone conference with the undersigned attorney/agent of record dated May 21, 2003, a provisional election to Group I, claims 1-24 and 32-36 was made, with traverse. Applicants hereby confirm that provisional election, with traverse.

As a formality, Applicants hereby cancel claims 25-31, without prejudice.

2. Drawings

The Patent Office has indicated that the formal drawings previously submitted have been approved.

3. Allowed Claims/Subject Matter

Applicants note with appreciation that the Examiner has indicated the subject matter of claims 5-9, 12-17, 19, 20, 22 and 33-36 are patentable, and would be allowable if rewritten in independent form.

3. § 103 Rejections

The Patent Office has rejected claims 1-4, 10, 11, 18, 21, 23, 24 and 32 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Sarchi et al. (U.S. Publication No. 2002/0102082).

The Patent Office asserts that Sarchi et al. teaches an optical fiber that meets all of the structural limitation of the optical fiber of claim 1, and further that the optical fiber of Sarchi would thus inherently have the same bandwidth as the optical fiber of claim 1, including a bandwidth of at least approximately 0.6 GHz.km at 850 nm.

The rejection is traversed.

Applicants respectfully submit that the optical fiber disclosed in Figure 10B and paragraphs [0159] et seq. of Sarchi do not meet all of the structural limitation of the optical fiber of claim 1. For example, paragraph [0163] of Sarchi states that the second glass layer (154) has a maximum refractive index difference of between about 0.0010 and 0.0030. Applicants note that these refractive index difference values correspond to a maximum relative refractive index difference of between about 0.07% (0.0010 divided by 1.444 times 100) and about 0.21% (0.0030 divided by 1.444 times 100). See, for example, the last line of page 7 of the present Specification.

Furthermore, Sarchi does not teach an optical fiber having a graded-index core from centerline to cladding.

In contrast, the present Application provides an optical fiber where the refractive index decreases gradually away from its center and finally drops to the same value as the cladding at the edge of the core (see Figure 14 of the present Application). Thus, the graded-index core decreases from a maximum relative refractive index difference at the centerline of the optical fiber to a relative refractive index difference of zero at the cladding.

The “maximum relative refractive index difference” of the optical fiber of the present invention corresponds to the maximum relative refractive index difference between the core and the cladding, i.e. corresponding to the greatest value of refractive index in the entire core.

Applicants note that Figure 9a of Sarchi shows a “peak on pedestal” profile that has an inner core 170, a first glass layer 172, and a cladding 174. Only a portion of the profile of Figure 9a has a graded index, i.e. inner core 170 is a graded index portion, but the first glass layer 172 of Sarchi has a substantially constant index of refraction of about 0.14% to about 0.35% across its radius, and therefore the “peak on pedestal” profile of Figure 9A is not a graded index core.

Regarding Claims 1 and 23, Applicants also submit that Sarchi does not state the bandwidth of any of its fibers at 850 nm.

With regard to the rejection of Claim 18, Applicants note that Claim 18 states that the optical fiber is a multimode fiber at an operating wavelength. On the other hand, Sarchi teaches single mode operation in both a first and second wavelength band, such as a first wavelength band between about 1300 nm and 1350 nm and a second wavelength band between about 1450 nm and 1625 nm. An operating wavelength of 1550 nm would be single-moded for the fiber of Sarchi.

In view of the above and foregoing, reconsideration of the Application is respectfully requested.

4. Conclusion

In view of the above, Applicants submit that the pending claims are in condition for allowance, and such allowance is earnestly solicited.

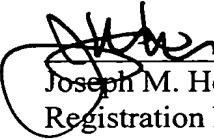
Applicants respectfully request that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Response timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Joseph M. Homa at 607-974-9061.

Respectfully submitted,

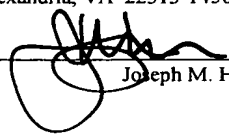
CORNING INCORPORATED

Date: Nov. 10, 2003



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